

Adding Data Elements to OSHDP Patient Level Data Sets



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CHIA Convention
San Jose, CA

Ginger Cox
Data Management Office
OSHDP

Agenda

- Background
- List of data elements
- Survey Results
- Next Steps

- MIRCal Updates



Background: Limitation of Current Data

- **Lack clinical information**
 - Initial lab result or vital sign cannot be obtain from ICD code, unless documented
- **Inadequate risk adjustment**
 - Additional data needed to predict patient's risk of mortality
- **Zip Codes = poor geographic substitute**
 - Health Planners and hospitals need geocodes to operate their programs more efficiently and effectively
- **Inadequate assessment of care**
 - Volume/surgeon info to evaluate patient safety, quality of care, and common practice in medical community.



California Health Policy and Data Advisory Commission (CHPDAC)

- **Members**
 - Physicians, hospitals, LTCs, business and labor coalitions, general public
- **Role**
 - Advises OSHPD on health policy and health information issues
- **Recommendations**
 - Add new data elements for risk-adjusted outcomes studies of care in California hospitals

Technical Advisory Committee (TAC)

- **Members**

- Clinical experts from research community, physicians, surgeons, hospitals and HIM professionals.

- **Roles**

- Assist CHPDAC in formulating policy and data recommendations to OSHPD
- Study the feasibility of developing reliable risk-adjustment factors for additional procedures and conditions.

National Focus on Healthcare Quality

- Agency for Health Research and Quality (AHRQ)
- National Quality Forum (NQF)
- Joint Commission (JC)
- Centers for Medicare and Medicaid Services (CMS)



Health & Safety Code



○ **Section 128737 (d)**

- Data reporting requirements be consistent with national standards as applicable

○ **Section 128738 (a)**

- Seek advice from the Commission and its appropriate committees
- Additions or deletions of data elements are made through the regulatory process

Health & Safety Code



○ **Section 128738 (b)**

- Prior to any additions or deletions, all of the following shall be considered:
 - (1) Utilization of sampling to the maximum extent possible.
 - (2) Feasibility of collecting data elements.
 - (3) Costs and benefits of collection and submission of data.
 - (4) Exchange of data elements as opposed to addition of data elements.

Health and Safety Code



o **Section 128738 (c)**

- The office shall add no more than a net of 15 data elements to each data set over any five-year period
- Elements contained in the HIPAA uniform claims transaction set are exempt from the 15 data element limit

Health and Safety Code



o **Section 128738 (d)**

- o In order to minimize costs and administrative burdens the Commission and the Office shall:
 - consider the total number of data elements required from hospitals and ambulatory surgery clinics
 - optimize the use of common data elements

Business Case

- **Determine business needs**

- Literature research
- Definitions and its citations
- Uses for OSHPD outcomes studies
- Uses for Public Health quality and safety
- Other states' uses

- **Include input from hospitals, stakeholders, vendors**



Information Gathering

- CA Dept of Public Health staff on standards (HL7, LOINC, CCD)
- CALINX and ELINCS lab standards
- Input from Cardinal Health (as used by Pennsylvania)
- CMS interest in the collection of lab data
- California Hospital Assessment and Reporting Taskforce (CHART)



Other States Are Interested

- AHRQ's "Adding Clinical Data Learning Network"
 - **Florida**
 - Pilot using 29 lab tests
 - **Minnesota**
 - Pilot using 21 lab tests and blood gas
 - **Virginia**
 - Pilot using 34 lab tests, along with LOINC codes
 - **Washington**
 - Planning for additional data elements in risk adjustment models



AHRQ's IQIs and PSIs

- **Risk factors associated with mortality and patient safety**
 - How sick patient is at time of admission
- **Inpatient Quality Indicators (IQIs)**
 - Risk factors based on conditions and procedures
- **Patient Safety Indicators (PSIs)**
 - Risk factors based on postoperative conditions



Recommended Data Elements

○ Lab Values

- AST
- Potassium
- Sodium
- pH
- PT/INR
- Albumin
- Creatinine
- BUN
- Platelets
- White Blood Cells
- Hemoglobin
- Hematocrit

○ Vital Signs

- Pulse
- Blood Pressure
- Respiration Rate
- Temperature
- Oxygen Saturation

○ Operating Physician ID

○ Patient Address

- Inpatient, ED, and AS

Source: Blood

Tourniquet is applied and area is disinfected



Needle is introduced into vein, blood is drawn into vial and analyzed



ADAM.

Purpose of the Survey



- **Goal:** understand current hospital environment and ability to report clinical data
- **Process:** engage stakeholders in the development of a survey tool to assess readiness
- **Result:** Provide feedback to our advisory committees, stakeholders, and hospitals

Survey Process



- ✓ Onsite visits with some hospitals (representative of rural, urban, teaching)
- ✓ Beta tested survey with a few hospitals and stakeholder organizations
- ✓ Surveys Sent: April 2 – Apr 18, 2008
- ✓ Surveys Re-sent: Apr 22 - May 9, 2008

Survey Content

- What physician identifiers are available
- How clinical data information and formats can be exchanged
- How hospitals define time of admission
- Common lab system vendors
- Source of IT support
- Hospital readiness for EHR
- Implementation preferences
- Invitation to participate on focus groups

SurveyMonkey.com because knowledge is everything



- 448 surveys were sent to hospitals' primary contact persons
- 164 responded representing 196 facilities, including
 - 30 Kaiser facilities
 - 2 Queen of Valley facilities



44%

Operating Physician ID

○ Definition

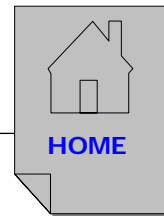
- The operating physician is the individual with primary responsibility for performing the procedure(s).

○ Survey Results

- Record: **Yes, if they do surgery**
- IDs: **Vary**
- Store: **Electronic**



Patient Address



○ Definition

- The street address of the patient's principal residence at the time of admission or encounter. This includes the name of the city, town, or village, and the two-letter capitalized abbreviation for the state.

○ Survey Results

- Record: **Primary Address, City, State**
- Homeless: **Vary**
- Store: **Electronic**

Laboratory Section



○ Laboratory Process

- Record Date and Time: **Yes**
- Rerun test by outside lab: **No**
- Pre-hospital lab values: **Paper**
- Your lab values: **Electronically**

Laboratory Tests



○ Measurements

- **Conventional Units**
- International System of Units

○ LOINC

- Codes for lab tests and vital signs
- National standard
- **Do Not Capture**

13 Lab Tests: Results

Definitions: Agree	96%
Capture: Yes	95%
Conventional Units	81%
Measure Values: Agree	88%
Format: Agree	81%
LOINC: NO	99%



Vital Signs Section

○ Vital Signs Process

- Record: **Handwritten**

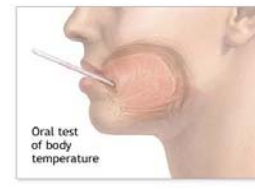
○ Typical reports

- 1** - Nurses Assessment Sheet
- 2** - Vital Sign Sheet
- 3** - History and Physical Report
- 4** - Emergency Dept Report
- 5** - Other, such as Urgent care reports, Preop records, and EMR entry screens



5 Vital Signs: Results

Definitions: Agree	96%
Capture: Yes	97%
Measure Values: Agree	96%
Format: Agree	91%



Helpful Insight: Time of Admission

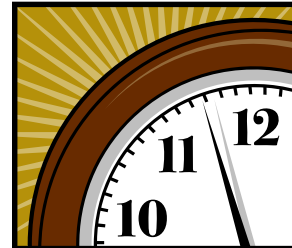


- 92 responses and 72 skipped this question
- **55%** Time of admitting physician order
- **54%** Time of registration
- **15%** Time of initial assessment
- **5.4%** Based on payer requirement
- **5.4%** Based on JC requirement
- **0%** Based on Title 22 requirement
- **7 Comments**

Helpful Insight: Time of Admission via ED or AS

- 1 - Time of admitting physician order
- 2 - Time of registration as ED or AS patient
- 3 - Time of transfer to an inpatient bed
- 4 - Other
- 5 - Time of initial assessment

- All of the above
- Comments: No ED or No AS



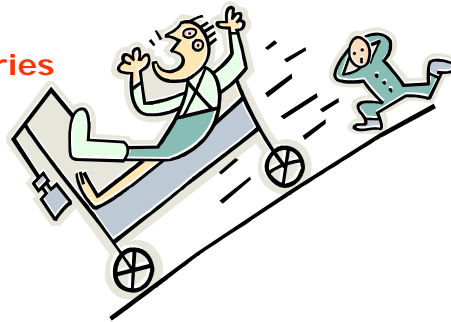
Helpful Insight: Facility Name

- Name of facility transferred from
 - Yes
 - Paper: Transfer papers, Admit note
 - Facility Name
 - Facility Type (GAC, SNF, Psych, Rehab)
- Name of facility transferred to
 - Yes
 - Paper: Discharge order, Transfer forms
 - Facility Name
 - Facility Type (GAC, SNF, Psych, Rehab)



Helpful Insight: E870-E879 for Patient Safety Indicators

- Code E870-E876 for misadventures
 - **Yes**
- Codes E878-E879 for abnormal reactions
 - **Yes**
- Comments
 - **PHFs = no surgeries**
 - **Internal policy**
 - **Optional Coding**



Helpful Insight: Present on Admission Exemption

- Indicator(s) reported for POA exempted ICD-9-CM codes:
 - **E**
 - **1**
 - **Blank**
 - **Other**
 - **E, I, Blank**
 - **Yes only**



Information Systems Results

- **How is your system organized?**

- **Centralized**
- Decentralized or Distributed



Laboratory Systems: Analysis, Extract, Append

- **Laboratory test results analyzed**

- 1** - In-house laboratory system
- 2** - Both
- 3** - Outside laboratory system

- **Extract lab test results and append to OSHPD file**

- Outside laboratory system: **Mixed**
- In-house laboratory system: **Mixed**



Lab Data Exchange

- **Participate in Lab data exchange**

- CALINX
- ELINCS
- **Neither**



Information Systems: Storage

Inhouse Laboratory Tests
Pharmacy Orders
Registration Entry
Dictated Reports

Now: Partially Paper and Partially Electronic

2010: Electronic EHR



Information Systems: Storage

Outside Laboratory Tests
Nursing Notes

Now: Paper only

2010: Electronic EHR



Target Date for EHR

- **Implementation of full EHR**
 - Implemented
 - **Unknown at this time**
 - Target dates: **2009 through 2014**
- **IT Support**
 - **Internal IT Staff**

Escape Key



Lead time needed

- Time needed for system development, testing and implementation to provide additional data elements to OSHPD
 - 3 months
 - 6 months
 - 9 months
 - **1 year**
 - Other



Costs

- **Estimate Costs:** **Unsure**
 - Physician ID **\$5K**
 - Patient Address **\$5K**
 - Lab tests **\$5K - \$100+K**
 - Vital Signs **\$5K - \$100+K**
- **Source of Costs**
 - 1** – External vendor programming
 - 2** - Internal programming
 - 3** - Staffing (record abstracting)



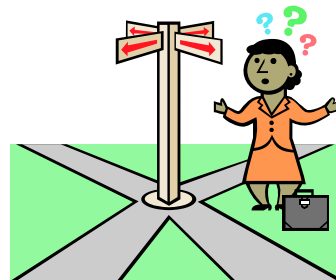
All or Phase in?

- **Collection preference**

- Collect all additional data elements together
- **Phase in the collection over time**

- **Which is more cost effective?**

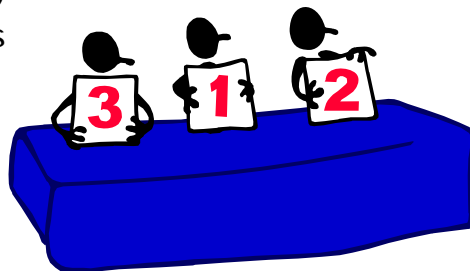
- All together
- **Phase in over time**



If phasing the collection over time?

- Preferred sequential order

- 1** - Patient Address
- 2** - Operating Physician ID
- 3** - Laboratory Tests
- 4** - Vital Signs



Next Steps

- Discuss the survey results and hospital concerns with our advisory committees
- Begin the development of the regulation package



Further Considerations



- Collect patient address on IP, ED and AS data sets
- Collect new clinical data elements on all inpatients
- Collect operating physician ID on all inpatient procedures



Further Considerations



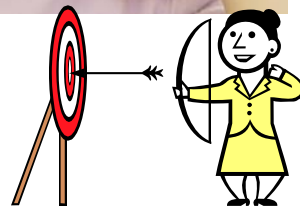
- Data source(s), clarity of definitions, purpose, alignment with other data initiatives
- National standards will be used to the maximum extent possible
- Possible phased implementation of data element collection likely



MIRCal Updates

- File Format Changes
 - ICD-10
 - Present on Admission
 - Principal Language Spoken
- File Format Testing

Questions?



Draft: Data Element Definitions Document

General Definitions					
Admission		Admission is defined as a hospital's formal acceptance of a patient who is to receive healthcare services while receiving room, board, and continuous nursing services 1. Admission begins at the time of the <i>inpatient order</i> 2. An inpatient means a person who has been formally admitted for observation, diagnosis or treatment and who is expected to remain overnight or longer 12. Patients shall be admitted only upon the order and under the care of a member of the medical staff of the hospital who is lawfully authorized to diagnose, prescribe, and treat patients 13.			
Principal Procedure		The patient's principal procedure is defined as one that was performed for definitive treatment rather than one performed for diagnostic or exploratory purposes, or was necessary to take care of a complication. If there appear to be two procedures that are principal, then the one most related to the principal diagnosis should be selected as the principal procedure. Procedures shall be coded according to the ICD-9-CM. If only non-therapeutic procedures were performed, then a non-therapeutic procedure should be reported as the principal procedure, if it was a significant procedure. A significant procedure is one that is surgical in nature, or carries a procedural risk, or carries an anesthetic risk, or is needed for DRG assignment 3.			
Other Procedure(s)		All significant procedures are to be reported. A significant procedure is one that is surgical in nature, or carries a procedural risk, or carries an anesthetic risk, or is needed for DRG assignment. Procedures shall be coded according to the ICD-9-CM 3.			
#	Laboratory Tests	Definitions	Time of Collection	Units of Measure	Location
1	Aspartate aminotransferase (AST)	This test measures the levels of the enzyme, aspartate aminotransferase (AST), in the blood 4.	First lab test within 24 hours of admission	Conventional unit: unit per liter (U/L) 10	<i>All Inpatients</i>
2	Potassium (K+)	This test measures the concentration of potassium that is in the blood 4.	First lab test within 24 hours of admission	Conventional unit: millimole per liter (mmol/L) 11	<i>All Inpatients</i>
3	Sodium (Na+)	This test measures the concentration of sodium that is in the blood 4.	First lab test within 24 hours of admission	Conventional unit: millimole per liter (mmol/L) 11	<i>All Inpatients</i>
4	pH	This test measures the acidity and alkaline (pH) of the blood 5.	First lab test within 24 hours of admission	Conventional unit: scale	<i>All Inpatients</i>
5	Prothrombin Time - International Normalized Ratio (PT-INR)	The prothrombin time (PT) and international normalized ratio (INR) test measure how well the blood is able to clot 6.	First lab test within 24 hours of admission	Conventional unit: PT is measured in seconds, and INR is measured in ratio.	<i>All Inpatients</i>
6	Albumin, serum	This test measures the concentration of albumin in serum, the clear liquid portion of blood 5.	First lab test within 24 hours of admission	Conventional unit: gram per deciliter (g/dL) 10	<i>All Inpatients</i>
7	Creatinine	This test measures the concentration of creatinine in the blood 4.	First lab test within 24 hours of admission	Conventional unit: milligram per deciliter (mg/dL) 10	<i>All Inpatients</i>
8	Blood urea nitrogen, (BUN)	The blood urea nitrogen (BUN) test measures the concentration of urea nitrogen in the blood 5.	First lab test within 24 hours of admission	Conventional unit: milligram per deciliter (mg/dL) 10	<i>All Inpatients</i>
9	Platelet count	This test measures the number of platelets in the blood 5.	First lab test within 24 hours of admission	Conventional unit: microliter (µL) 10	<i>All Inpatients</i>

Draft: Data Element Definitions Document

10	White blood cell count (WBC)	This test measures the number of white blood cells (WBCs) ⁵ in the blood.	First lab test within 24 hours of admission	Conventional unit: microliter (μL) ¹⁰	<i>All Inpatients</i>
11	Hemoglobin (Hgb) or Hematocrit (Hct)	This test measures the concentration of hemoglobin in the blood ⁵ . <i>Hematocrit measures the volume of red blood cells.</i>	First lab test within 24 hours of admission	Conventional units: Hemoglobin is in gram per deciliter (g/dL) ¹⁰ <u>or</u> hematocrit is in percentage (%) ¹⁰	<i>All Inpatients</i>
#	Vital Signs	Definitions	Time of Collection	Units of Measure	Location
12	Pulse rate	The pulse rate is the number of times a person's heart beats in one minute ⁴ .	Initial reading on admission	Number of heartbeats per minute	<i>All Inpatients</i>
13	Blood Pressure	Blood pressure is a measurement of the force applied to the walls of the arteries as the heart pumps blood through the body ⁵ . The systolic blood pressure, which is the top number, represents the pressure in the arteries as the heart contracts and pumps blood into the arteries. The diastolic pressure, which is the bottom number, represents the pressure in the arteries as the heart relaxes after the contraction ⁴ .	Initial reading on admission	Readings for systolic and diastolic pressure in millimeters of mercury (mmHg)	<i>All Inpatients</i>
14	Respiration rate	The respiration rate is the number of breaths per minute.	Initial reading on admission	Number of breaths per minute	<i>All Inpatients</i>
15	Temperature	Temperature is the measurement of a person's body temperature ⁵ .	Initial reading on admission	<i>Fahrenheit or Celsius</i>	<i>All Inpatients</i>
16	Oxygen Saturation (by pulse oximeter)	This test measures the level of oxygen in the blood of the arteries ⁴ .	Initial reading on admission	Percentage	<i>All Inpatients</i>

Draft: Data Element Definitions Document

#	Other Data Elements	Definitions	Time of Collection	Units of Measure	Type of Care
17	Operating Physician	The operating physician is the individual with primary responsibility for performing the procedure(s) ^{7,8}	All procedures or specific procedures or principal procedures during the inpatient stay	<i>National Provider ID (NPI) <u>or</u> License number assigned by the Medical Board of California of the Department of Consumer Affairs <u>or</u> first name, middle initial, and last name <u>or</u> combination of above</i>	<i>All Inpatients</i>
18	Patient Address	The street address of the patient's principal residence at the time of admission or encounter. This includes the name of the city, town, or village, and the two-letter capitalized abbreviation for the state ⁹ .	At the time of admission or encounter	Street Address, City, State	<i>All Inpatients and encounters</i>

Resources

- ¹ Health Information Management and Technology, AHIMA, 2006
- ² Present On Admission, AHIMA, 2008
- ³ OSHPD, California Inpatient Data Reporting Manual, Medical Information Reporting for California, Fifth Edition
- ⁴ www.Medicineonline.com
- ⁵ Medline Encyclopedia (online)
- ⁶ Wikipedia Encyclopedia (online)
- ⁷ 837 Health Care Claims: Institutional, ASC X12N/005010X223
- ⁸ 837 Health Care Service Data Reporting Guide, ASC X12N/005010X225
- ⁹ New York Dept of Health Data Dictionary
- ¹⁰ Harrison's Principles of Internal Medicine, Thirteenth Edition
- ¹¹ Stedman's Pathology & Lab Medicine Words, 2005
- ¹² Title 22. Social Security, Division 5. Licensing and Certification of Health Facilities, Home Health Agencies, Clinics, and Referral Agencies,
- ¹³ Title 22. Social Security, Division 5. Licensing and Certification of Health Facilities, Home Health Agencies, Clinics, and Referral Agencies,